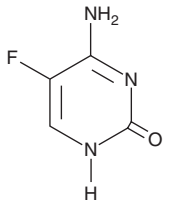
PRODUCT INFORMATION

5-Fluorocytosine

Item No. 11635

CAS Registry No.:	2022-85-7
Formal Name:	6-amino-5-fluoro-2(1H)-pyrimidinone
Synonyms:	Ancobon, Ancotil, 5-FC, NSC 103805, Ro 2-9915
MF:	$C_4H_4FN_3O$
FW:	129.1
Purity:	≥95%
UV/Vis.:	λ_{max}: 239, 278 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

5-Fluorocytosine (5-FC) is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-FC in the solvent of choice, which should be purged with an inert gas. 5-FC is soluble in the organic solvent DMSO at a concentration of approximately 0.2 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 5-FC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5-FC in PBS (pH 7.2) is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

5-FC, a fluorinated pyrimidine analog, is a synthetic antimycotic prodrug that is converted by cytosine deaminase to 5-fluorouracil.[1] 5-Fluorouracil, a widely used cytotoxic drug, is further metabolized to fluorinated ribo- and deoxyribonucleotides, resulting in the inhibition of DNA and protein synthesis, which has multiple effects including inhibition of *Candida* species and *C. neoformans* infections and cytotoxicity towards cancer cells.[1,2] In combination with a retroviral replicating vector carrying a cytosine deaminase prodrug-activating gene, 5-FC has been shown to selectively eliminate CT26 and Tu-2449 tumor cells *in vitro* (IC_{50}s = 4.2 and 1.5 µM, respectively) and to significantly improve survival and reduce tumor size (at a dose of 500 mg/kg) in two different syngeneic mouse glioma models.[3]

References

1. Herbrecht, R., Nivoix, Y., Fohrer, C., *et al.* Management of systemic fungal infections: Alternatives to itraconazole. *J. Antimicrob. Chemother.* **56(Suppl 1)**, i39-i48 (2005).
2. Fuerer, C. and Iggo, R. 5-Fluorocytosine increases the toxicity of Wnt-targeting replicating adenoviruses that express cytosine deaminase as a late gene. *Gene Ther.* **11(2)**, 142-151 (2004).
3. Ostertag, D., Amundson, K.K., Lopez Espinoza, F., *et al.* Brain tumor eradication and prolonged survival from intratumoral conversion of 5-fluorocytosine to 5-fluorouracil using a nonlytic retroviral replicating vector. *Neuro Oncol.* **14(2)**, 145-159 (2012).

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